WATER SUPPLY AND POLLUTION CONTROL

Research Inventory
Active Projects - 1958

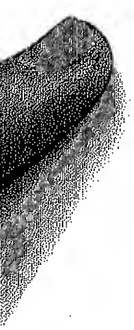
Prepared by

Engineering Resources Program
Frank A. Butrico, Chief

Harry A. Faber
Research Grants Co-

Keene Taylor
Assistant Sanitary Engineer

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Division of Engineering Services and
Division of Water Supply and Pollution Control
Washington 25, D. C.



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FOREWORD

We are moving forward into an unprecedented era, with a reduced time factor for equating the impact of pollution on our water resources. The type and rapidity of change require much keener vision in anticipating and meeting problems, and our research efforts must be geared accordingly. Our practice has outrun theory in many aspects of knowledge in this field.

We recognize the need for a record of active research projects in water supply and pollution control. The Research Inventory has been prepared to enable scientists and engineers to review the current status of this research and to chart future needs for action.

M. D. Hollis
Assistant Surgeon General
Chief Engineer

There is a great need today for more basic knowledge in all areas of water supply and in the protection of water quality. The amount of research underway in this field is small in relation to growing problems; that which is needed will require the combined efforts of researchers everywhere. This inventory of active projects can do much to stimulate expanded programs of water supply and pollution control research which are essential if we are to solve the complex problems of our growing nation.

Gordon E. McCallum, Chief
Division of Water Supply
and Pollution Control

ACKNOWLEDGEMENT

In compiling the basic data for the Research Inventory the Public Health Service was assisted by the American Water Works Association, the Water Pollution Control Federation, the National Technical Task Committee on Industrial Wastes, and others. Grateful acknowledgement is made of the contribution of these organizations in distributing and collecting the questionnaires upon which the Inventory depends.

INTRODUCTION

Research Inventory No. 1 is a report summarizing data on 280 water supply and pollution control research projects active in the United States during 1958. The information presented was compiled from questionnaires distributed to investigators and administrators known to be conducting or directing research in water, sewage, and industrial wastes.

The Inventory is designed to provide a useful record of research underway, and also to facilitate communication between investigators. It includes a brief report of basic data concerning each research project, a comprehensive index of subjects being studied, and an address list for use in the exchange of information.

It is recognized that the first Research Inventory cannot present a complete listing of all active projects in water supply and pollution control research. However, the Inventory is to be revised and reissued annually, and made as comprehensive as possible. This can be achieved with the assistance of all individuals who can provide additional reports or suggestions.

Individuals who submitted reports for this issue will receive copies of Research Inventory No. 1, and they will be requested to submit reports for the second issue of the Inventory. Others having information or suggestions should correspond with one of the following:

Mr. R. J. Faust, Secretary, American Water Works Association, 2 Park Avenue, New York 16, New York.

Mr. Ralph E. Fuhrman, Executive Secretary, Water Pollution Control Federation, 4435 Wisconsin Avenue, Washington 16, D. C.

Secretary, National Technical Task Committee on Industrial Wastes, Division of Water Supply and Pollution Control, U. S. Public Health Service, Washington 25, D. C.

Research Grants Coordinator, Engineering Resources Program, Division of Engineering Services, U. S. Public Health Service, Washington 25, D.C.

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RESEARCH INVENTORY

The Research Inventory is divided into three sections. These sections provide a quick guide to the list of research projects, to a reference index, and to sources from which further information may be available.

It is suggested that the introductory page of each section of the Inventory be reviewed. These pages explain the arrangement of information presented. Those using the Inventory may then utilize either the Project List (Section 1) or the Subject Index (Section 2) for locating information. For projects of particular interest he may refer to the Address List (Section 3) to obtain additional information.

1 Research Proje
LIST BY STATES

PROJECT LIST

The first section of the Research Inventory presents basic data on the 280 research projects reported in the survey. The projects are listed geographically by states and institutions.

Projects are numbered consecutively and the numbers refer also to the Subject Index (Section 2) and the Address List (Section 3).

The Project List includes:

LOCATION - the State, Institution, and City.

TITLE - a brief description of the research.

INVESTIGATOR - in charge of the project.

TYPE OF RESEARCH - reported by the investigator as basic (bas), basic-applied (bas-appl), or applied (appl).

SUPPORT - listing source of support and amount (when reported); the latter was not required of reporters.

INFORMATION - Detailed information is available when indicated (Info.). It is not available when indicated (No info.) because no publications have been issued, or because there are restrictions on the information which may be disclosed.

1 ALABAMA - Alabama Polytechnic Institute, Auburn
The Feasibility of Domestic Sewage Lagoons for Alabama
Theodore Jaffe; Bas-Appl; Support: Ala. Poly. Inst.; Info.

2 ALABAMA - Alabama Polytechnic Institute, Auburn
The Treatment of Textile Desizing Wastes
Theodore Jaffe; Bas-Appl; Support: Ala. Poly. Inst. Engrg. Experiment Sta. $5,570; Info.

3 ALASKA - Alaska Water Pollution Control Board, Juneau
Characteristics of Silver Bay for Control of Pulp Mill Pollution
E. F. Eldridge; Appl; Support: State, Alaska Lumber & Pulp Co. U. S. Fish & Wildlife Serv.; Info.

4 ALASKA - Alaska Water Pollution Control Board, Juneau
Characteristics of Ward Cove as a Measure of Pulp Mill Pollution
Wm. L. Porter; Appl; Support: State; Info.

5 ALASKA - Alaska Water Pollution Control Board, Juneau
Septic Tanks With Subsurface Disposal Fields Built at Fairbanks
Chas. Froman; Appl; Support: State; Info.

6 ARKANSAS - Arkansas Water Pollution Control Commission, Little Rock
Automatic Compositing Waste Sampler
M. L. Wood; Appl; Support: State; No Info.

7 ARKANSAS - Arkansas Water Pollution Control Commission, Little Rock
Automatic Stream Gauging and Recording Device
M. L. Wood; Appl; Support: State; No Info.

8 ARKANSAS - University of Arkansas, Fayetteville
Variables Affecting Efficiency of Coarse-Grained Water Filters
Loren R. Heiple; Appl; Support: Winthrop Rockefeller; Info.

9 CALIFORNIA - California Institute of Technology, Pasadena
Resuspension of Flocculent Solids in Sedimentation Basins
A. C. Ingersoll; Bas-Appl; Support: Fed. RG $15,158; Info

10 CALIFORNIA - California State Water Pollution Control Board, Sacramento
Current Measurement in Estuarine and Coastal Waters
J. W. Johnson; Appl; Support: Fed.-State $7,000; Info.

11 CALIFORNIA - Humboldt State College, Arcata
Oceanographic Study Between the Points of Trinidad & Eel Rivers
Humboldt State Coll; Appl; Support: Fed.-State $20,000; Info. 11

12 CALIFORNIA - Humboldt State College, Arcata
Dissolved Oxygen Requirements of Aquatic Insects
John W. DeWitt; Bas; Support: Fed. RG $1,955; Info. 12

13 CALIFORNIA - Humboldt State College, Arcata
Oceanographic Study of Near-Shore Waters Off Humboldt Bay
Geo. H. Allen; Bas; Support: State $20,000; Info. 13

14 CALIFORNIA - National Canners Association, Berkeley
Water Conservation in Food Canning
Walter A. Mercer; Bas-Appl; Support: Fed. RG $12,500; Info. 14

15 CALIFORNIA - Scripps Institute of Oceanography, La Jolla
Effect of Organic Substances from the Sea on Bacteria
Dr. Galen E. Jones; Bas; Support: Fed. RG $9,924; Info. 15

16 CALIFORNIA - University of California, La Jolla
Effects of Pollution Upon Kelp
University of Calif.; Appl; Support: Fed.-State $20,000; Info. 16

17 CALIFORNIA - University of California, Berkeley
Reaction Kinetics of Anaerobic Fermentation Systems
Erman A. Pearson; Bas-Appl; Support: U. of Calif. $5,000; Info. 17

18 CALIFORNIA - University of California, Berkeley
Variables Affecting Removal of ABS by Sewage Treatment Plants
P. H. McGauhey; Bas-Appl; Support: Assoc. of Amer. Soap &
Glycerine Producers $17,500; Info. 18

19 CALIFORNIA - University of Southern California, Los Angeles
Chromatographic Assay of Extracellular Algal Metabolism Products
Robt. C. Merz; Bas; Support: Fed. RG $19,336; Info. 19

CALIFORNIA - University of Southern California, Los Angeles
Quantity of Oily Substances on Beaches and Near-Shore Waters
Robt. C. Merz; Bas-Appl; Support: State $25,000; Info. 20

21 CALIFORNIA - University of Southern California, Los Angeles
A Short Method for Measuring ABS in Water and Sewage
Dean Alvah Hall; Bas; Support: Assoc. of Amer. Soap & Glycerine Producers $5,500; Info. 21

22 CALIFORNIA - University of Southern California, Los Angeles
Relationships of Polychaetous Annelids to Marine Pollution
John L. Mohr; Bas-Appl; Support: Fed. RG $8,100; Info. 22

23 CALIFORNIA - University of Southern California, Los Angeles
Survey of So. California Shelf for Effects of Waste Discharges
Robt. E. Stevenson; Bas-Appl; Support: State $125,000; Info. 23

24 COLORADO - University of Colorado, Denver
Shigella Dysentery Organisms in Contaminated Irrigation Water
Wen-Lan Lou Wang; Bas-Appl; Support: Fed. RG $14,777; Info. 24

25 CONNECTICUT - Wesleyan University, Middletown
Automatic Dissolved Oxygen Determination
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 25

26 CONNECTICUT - Wesleyan University, Middletown
Automatic Conductivity Meter
M. G. Burford; Bas-Appl; Support: State $1,000; Info. 26

27 CONNECTICUT - Wesleyan University, Middletown
Automatic Sample Collector
M. G. Burford; Bas-Appl; Support: State $1,000; Info. 27

28 CONNECTICUT - Wesleyan University, Middletown
Effect of Copper on Sludge Digestion
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 28

29 CONNECTICUT - Wesleyan University, Middletown
Pollution Reduction in Cotton Mills by Process Chemical Changes
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 29

30 CONNECTICUT - Wesleyan University, Middletown
Pollution Reduction in Woolen Mills by Process Chemical Changes
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 30

ONNECTICUT - Wesleyan University, Middletown
Pollution Sources from Printed Circuit Plants
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info.
31 41

ONNECTICUT - Wesleyan University, Middletown
Set-up and Control of Experimental Sludge Digestion
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info.
32 42

ONNECTICUT - Wesleyan University, Middletown
Textile Waste Pollution Survey Simplified
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info.
33 43

ONNECTICUT - Wesleyan University, Middletown
Treatment of Tannery Wastes
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $2,000; Info.
34 44

ONNECTICUT - Wesleyan University, Middletown
Use of Versene to Eliminate Effect of Metals on B.O.D.
M. G. Burford; Bas-Appl; Support: State; Info.
35 45

ONNECTICUT - Wesleyan University, Middletown
Improvement of Analytical Methods
M. G. Burford; Bas; Support: State; Info.
36 46

ONNECTICUT - Wesleyan University, Middletown
Pilot Treatment Plants for Dairy and Automatic Laundry Wastes
M. G. Burford; Bas-Appl; Support: State; Info.
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ONNECTICUT - Wesleyan University, Middletown
Properties of Various Coagulating Agents
M. G. Burford; Bas-Appl; Support: State; Info.
38 48

Yale University, New Haven
nge Treatment of Electroplating and Brass Wastes
Walker; Bas-Appl; Support: State; Info.
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ONNECTICUT - Yale University, New Haven
Estimating Yields of a Reservoir on a Digital Computer
E. L. MacLeman; Appl; Support: MIT Computer Center & New Haven Water Co.; Info.
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DELAWARE - University of Delaware, Newark Settling Properties of Sludges V. C. Behn; Bas; Support: Fed. NSF $1,000; Info.	42
DELAWARE - University of Delaware, Newark Storm Drainage Research Project Paul Bock; Appl; Support: State $13,000; Info.	43
FLORIDA - University of Florida, Gainesville Comprehensive Study of Water Coagulation A. P. Black; Bas; Support: Fed. RG $19,527; Info.	44
FLORIDA - University of Florida, Gainesville Ion Exchange Resins to Remove Fluoride Ion from Drinking Water A. P. Black; Bas; Support: Fed. RG $5,770; Info.	45
FLORIDA - University of Florida, Gainesville Acid Intermediates Occurring During Anaerobic Fermentation A. M. Buswell; Appl; Support: Fed. RG $9,027; Info.	46
FLORIDA - University of Florida, Gainesville Bacterial Oxidation of Nitrite A. M. Buswell; Bas-Appl; Support: Fed. RG $15,352; Info.	47
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FLORIDA - University of Florida, Gainesville Anti-Pollution and Sewage Disposal for Florida Communities F. W. Gilcreas; Appl; Support: State $10,000; Info.	49
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51 FLORIDA - University of Florida, Gainesville
Dispersion and Effects of Industrial Airborne Wastes
E. R. Hendrickson; Bas; Support: Fed. RG $20,215; Info. 51

52 FLORIDA - University of Florida, Gainesville
Aspects of Radiation Acquired by Fresh-Water Microorganisms
Jas. B. Lackey; Bas; Support: Fed. AEC $10,860; Info. 52

53 FLORIDA - University of Florida, Gainesville
Taxonomy and Ecology of Iron and Sulfur Bacteria
Jas. B. Lackey; Bas; Support: Fed. RG $14,835; Info. 53

54 GEORGIA - Georgia Institute of Technology, Atlanta
Chicken Processing Waste Treatment
Robt. S. Ingols; Bas-Appl; Support: State; Info. 54

55 GEORGIA - University of Georgia, Athens
Effect of Oxygen Tension on Fish Common to the Southern U. S.
Donald C. Scott; Bas; Support: Natl. Council for Stream Improvement; $10,450; Info. 55

56 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Coagulating Water With Ferrous Sulfate Liquid From Steel Mills
John R. Baylis; Appl Support: Local; Info. 56

57 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Corrosion of Cast Iron Water Pipe
John R. Baylis; Appl; Support: Local; Info. 57

58 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Detection of Coliform Bacteria With the Electron Microscope
LeRoy E. Scarce; Appl; Support: Local; Info. 58

59 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Sand Bed Studies and Gravel Movement in Filter Bed Maintenance
John R. Baylis; Appl; Support: Local; Info. 59

60 ILLINOIS - Chicago Department of Water and Sewers, Chicago
High Rate Filtration
John R. Baylis; Appl; Support: Local; Info. 60

61 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Filtered Water Coagulated Material Detection by Membrane Filter
Jas. C. Vaughn; Appl; Support: Local; Info.

62 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Monitoring Water for Radioactivity
John R. Baylis; Appl; Support: Local; Info.

63 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Ridged Gelatinous Coating in Water Pipes Causing Friction Loss
John R. Baylis; Bas-Appl; Support: Local; Info.

64 ILLINOIS - Illinois Institute of Technology, Chicago
Effect of Ammonium Ion Concentration on Biological Oxidation
Richard Pavia; Bas-Appl; Support: Ill. Inst. of Tech.; Info.

65 ILLINOIS - Illinois Institute of Technology, Chicago
Agent in Lake Michigan Inhibiting E. Coli and Related Bacteria
L. R. Hedrick; Bas; Support: Fed. RG $9,155; Info.

66 ILLINOIS - Illinois State Water Survey, Urbana
Chromatographic Identification of Organic Acids in Water
T. E. Larson; Bas-Appl; Support: State; Info.

67 ILLINOIS - Illinois State Water Survey, Urbana
Reservoir Sediment and Watershed Factors at Springfield Plain
J. B. Stall; Bas-Appl; Support: Fed-State; Info.

68 ILLINOIS - Illinois State Water Survey, Urbana
Drop-Inlet Spillway Research
H. W. Humphreys; Bas-Appl; Support: State; Info

69 ILLINOIS - Illinois State Water Survey, Urbana
Evaporation Suppression from Water Surfaces
W. J. Roberts; Appl; Support: State; Info.

70 ILLINOIS - Illinois State Water Survey, Urbana
Ground-Water Occurrence, Yield & Movement in American Bottom
H. F. Smith; Bas-Appl; Support: State; Info.

71 ILLINOIS - Illinois State Water Survey, Urbana
Ground-Water Recharge in Peoria
Robt. H. Harmeson; Bas-Appl; Support: State; Info. 71

72 ILLINOIS - Illinois State Water Survey, Urbana
Loss of Carrying Capacity in Water Mains Due to Water Quality
T. E. Larson; Bas-Appl; Support: Fed. RG $20,000; Info. 72

73 ILLINOIS - Illinois State Water Survey, Urbana
Mounts for Low-Level Radioactivity Counting in Water Solids
T. E. Larson; Appl; Support: State; Info. 73

74 ILLINOIS - Illinois State Water Survey, Urbana
Study of Surface Precipitation Using Radar Instrumentation
Glenn Stout; Bas-Appl; Support: U. S. Army Signal Corps; Info. 74

75 ILLINOIS - Sanitary District, Greater Peoria
Anaerobic Contact Process for Domestic Sewage Treatment
Leon Kraus; Appl; Support: Fed. $5,500; Info. 75

76 ILLINOIS - University of Illinois, Urbana
Biological Treatment of Petrochemical Wastes
R. S. Engelbrecht; Bas-Appl; Support: Fed. RG $8,000; Info. 76

77 ILLINOIS - Wilson & Company, Inc., Chicago
Anaerobic Digestion Mixed Liquor Separation Studies
A. J. Steffen; Appl; Support: Wilson & Co.; Info. 77

78 INDIANA - The Hays Corporation, Michigan City
Development of Dissolved Oxygen Analyzer
W. H. Pugsley; Appl; Support: Fed. $14,300; Info. 78

79 INDIANA - Purdue University, Lafayette
Treatment of Strawboard and Semi-Chemical Bleaching Liquors
Don E. Bloodgood; Appl; Support: Natl. Council for Stream Improvement; $3,348; Info. 79

80 INDIANA - Purdue University, Lafayette
Contaminants in Liquid Chlorine and Methods for Their Estimation
M. G. Mellon; Bas-Appl; Support: Fed. RG $10,178; Info. 80

81 INDIANA - Purdue University, Lafayette
Aerobic Digestion of Sludge
Don E. Bloodgood; Bas; Support: Purdue U.; Info. 81

82 INDIANA - Purdue University, Lafayette
Effect of Temperature on Digestion
Don E. Bloodgood; Bas; Support: Purdue U.; Info. 82

83 INDIANA - Purdue University, Lafayette
Mechanism of Hydrogen Sulfide Production
G. H. Teletzke; Bas; Support: Purdue U.; Info. 83

84 INDIANA - Purdue University, Lafayette
Semi-Chemical Bleaching Wastes Research
Don E. Bloodgood; Bas; Support: Natl. Council for Stream Improvement $5,000; Info. 84

85 INDIANA - Purdue University, Lafayette
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Don E. Bloodgood; Bas; Support: Group of interested Manufacturers $3,000; Info. 85

86 INDIANA - Purdue University, Lafayette
Volatile Acid Formation During Sewage Sludge Digestion
G. H. Teletzke; Bas; Support: Fed. RG $4,760; Info. 86

87 INDIANA - Purdue University, Lafayette
Effect of Disinfection Dosages on Coal-Tar Lined Cast Iron Pipe
H. R. Wilke; Bas-Appl; Support: Clow Pipe Co. $20,000; Info. 87

88 INDIANA - Purdue University, Lafayette
Farm Pond Water Treatment for Domestic Use
H. R. Wilke; Appl; Support: Fed. RG $4,364; Info. 88

89 IOWA - Iowa State College, Ames
Diatomite Filtration of Municipal Water Supplies
E. R. Baumann; Bas-Appl; Support: Iowa State Coll. & Everpure, Inc. $4,500; Info. 89

90 IOWA - Iowa State College, Ames
Plant-Scale Study of Preaeration in Sewage Treatment
E. R. Baumann; Bas-Appl; Support: Fed. RG $13,900; Info. 90

91 IOWA - Iowa State College, Ames
Superchlorination-Dechlorination Studies on Small Water Supplies
E. R. Baumann; Bas-Appl; Support: Iowa State Coll. & Everpure, Inc. $4,500; Info. 91

92 IOWA - Rath Packing Company, Waterloo
Waste Disposal
R. C. Burrell; Appl; Support: Roth Packing Co. $10,000; Info. 92

93 KANSAS - Kansas State Board of Health, Topeka
Sources and Seasonal Variations of Nitrates in Water Supply Wells
Dwight F. Metzler; Bas-Appl; Support: Fed. RG $1,840; Info. 93

94 KANSAS - Kansas State Board of Health, Topeka
Coliform Organisms and Enterococci as Indices of Water Quality
Cassandra Ritter; Appl; Support: Fed. RG $6,095; Info. 94

95 KANSAS - Kansas State College, Manhattan
Filtering Farm Pond Water
T. H. Lord; Appl; Support: Kan. State Coll.; Info. 95

96 KANSAS - University of Kansas, Lawrence
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R. T. Page; Bas-Appl; Support: State; Info. 96

97 KANSAS - University of Kansas, Lawrence
Synthetic Detergent Removal in Municipal Water Supplies
R. T. Page; Bas-Appl; Support: U. of Kan.; Info. 97

98 KENTUCKY - University of Kentucky, Lexington
Industrial Waste Treatment and Effects on Public Waters
Sam C. Hite; Appl; Support: State $10,000; No info. 98

99 KENTUCKY - University of Louisville, Louisville
Aquatic-Life Resources Project for the Ohio River
Wm. M. Clay; Appl; Support: State $25,000; Info. 99

100 KENTUCKY - University of Louisville, Louisville
Radioactivity Monitor Project Along the Ohio River
Wm. M. Clay; Bas-Appl; Support: State $12,000; Info. 100

101 LOUISIANA - Louisiana State University, Baton Rouge
Treatment of Kraft Mill Wastes for Removal of Color
Herbert F. Berger; Appl; Support: Natl. Council for Stream Improvement $8,985; Info. 101

102 LOUISIANA - Louisiana State University, Baton Rouge
Dissolved Oxygen Distribution Profiles Under Various Conditions
Arthur G. Keller; Bas-Appl; Support: La. Sugar Producers Waste Control Council $2,400; Info. 102

103 LOUISIANA - Louisiana Wildlife and Fisheries Commission, Baton Rouge
Biological and Chemical Assay of Louisiana Sugar Mill Wastes
Robt. A. LaFleur; Bas-Appl; Support: State; Info. 103

104 LOUISIANA - Louisiana Wildlife and Fisheries Commission, Baton Rouge
Survey of the Mississippi River in the Vicinity of Baton Rouge
Richard T. Gregg; Bas; Support: State $20,000; Info. 104

105 LOUISIANA - Louisiana Wildlife and Fisheries Commission, Baton Rouge
Statewide Water Quality Inventory
K. E. Biglane; Bas; Support: State; Info. 105

106 LOUISIANA - Northwestern State College, Natchitoches
Distribution of Tendipedidae and Domestic Sewage Pollution
Jas. E. Sublette; Bas; Support: Fed. RG $3,370; Info. 106

107 MAINE - Bates College, Lewiston
Control of Hydrogen Sulfide Production in Surface Waters
Walter A. Lawrence; Bas; Support: Natl. Council for Stream Improvement; Info. 107

108 MAINE - University of Maine, Orono
Development of More Efficient Oxygen Transfer Techniques
S. A. Zieminski; Bas; Support: Natl. Council for Stream Improvement $10,484; Info. 108

109 MAINE - University of Maine, Orono
Treatment of Protein Water From Potato Starch Manufacture
Seymour J. Ryckman; Bas-Appl; Support: State and Potato Starch Manufactures, Inc. $4,000; Info. 109

110 MARYLAND - Johns Hopkins University, Baltimore
Artificial Clays for the Fixation of Radioactive Nuclides
Walter Patrick; Bas-Appl; Support: Fed. AEC $25,000; Info. 110

MARYLAND - Johns Hopkins University, Baltimore Fission Waste Disposal by Adsorption of Isotopes on Soil-Sawdust John C. Geyer; Bas-Appl; Support: Fed. AEC $25,000; Info.	111
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MARYLAND - Johns Hopkins University, Baltimore Transportation of Radioactive Wastes John C. Geyer; Bas-Appl; Support: Fed. AEC $25,000; Info.	113
MARYLAND - Johns Hopkins University, Baltimore Low-Flow Augmentation for Stream-Pollution Abatement C. H. Hull; Appl Support: Fed. RG $21,045; Info.	114
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MARYLAND - Johns Hopkins University, Baltimore Removal of ABS from Potable Water by Treatment Modification Chas. E. Renn; Bas-Appl; Support: Assoc. of Amer. Soap & Glycerine Producers $12,252; Info.	116
MARYLAND - Johns Hopkins University, Baltimore Improvement of Molecular Membrane Bacteriological Techniques Chas. E. Renn; Bas-Appl; Support: Salem-Brosius, Inc.; Info.	117
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121 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
Biological Treatability of Organic Industrial Wastes
Jas. M. Symons; Bas-Appl; Support: MIT; Info.

122 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
Radioactive Tracer Study of Endogenous Metabolism
Jas. M. Symons; Bas-Appl; Support: Fed. RG $15,142; Info.

123 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
Biochemical Characteristics of Synthetic Detergents
Ross E. McKinney; Bas-Appl; Support: Fed. RG $8,500; Info.

124 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
Corrosion Control in Potable Water Systems
Rolf Eliassen; Bas-Appl; Support: Amer. Iron & Steel Inst., AWWA, and John B. Pierce Foundation $10,000; Info.

125 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
Disposal of Radioactive Wastes from Nuclear Reactor Fuels
Rolf Eliassen; Bas-Appl; Support: Fed. AEC $36,000; Info.

126 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
Nitrogen in Aerobic Stabilization of Organic Wastes in Streams
Ross E. McKinney; Bas-Appl; Support: Fed. RG $5,000; Info.

127 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
Survival of Pathogenic Organisms in H
Clair N. Sawyer; Bas-Appl; Support: F

128 MICHIGAN - Kalamazoo College, K
Removal and Disposal of Sus
Russell O. Blosser; Bas; Su
Improvement $1,200; Info.

129 MICHIGAN - Michigan State Unive
Toxicity of Cadmium and Hex
R. U. Byerrum; Bas; Support

130 MICHIGAN - Michigan State Unive
Protective Coatings in Wate
Robt. F. McCauley; Bas-Appl

131 MICHIGAN - Michigan State University, East Lansing
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Karl L. Schulze; Bas; Support: Mich. State U. Engrg. Experiment Sta. $4,000; Info. 131

132 MICHIGAN - Michigan State University, East Lansing
Vertical Screen Trickling Filter For Treating Wastes
Karl L. Schulze; Bas-Appl; Support: Mich. State U. Engrg. Experiment Sta. $6,000; Info. 132

133 MICHIGAN - Michigan State University, East Lansing
Fertilization and Primary Production of a Warm Water Stream
R. C. Ball; Bas; Support: State $3,580; Info. 133

134 MICHIGAN - University of Michigan, Ann Arbor
Drought Flow Characteristics of Michigan Streams
C. J. Velz; Appl; Support: State $7,000; Info. 134

135 MICHIGAN - University of Michigan, Ann Arbor
Role of Substrate in Stream Fauna Distribution
Geo. H. Lauff; Bas; Support: Fed. RG $7,577; Info. 135

136 MICHIGAN - University of Michigan, Ann Arbor
Study of Various Aspects of the Great Lakes
David C. Chandler; Bas-Appl; Support: Fed. NSF and U. of Mich.; Info. 136

137 MICHIGAN - University of Michigan, Ann Arbor
Stream Analysis and Hydrology
C. J. Velz; Bas-Appl; Support: Natl. Council for Stream Improvement $4,266; Info. 137

138 MICHIGAN - University of Michigan, Ann Arbor
Use of Algae in the Treatment of Sewage Effluents
J. A. Borchardt; Bas-Appl; Support: Fed RG $15,074; Info. 138

139 MICHIGAN - Wayne State University, Detroit
Determining Radioactive Isotopes in Water and Sewage
Richard B. Hahn; Bas-Appl; Support: Fed. RG $8,500; Info. 139

140 MINNESOTA - University of Minn. School of Public Health, Minneapolis
Study of Limnology, Lake Superior
H. M. Bosch; Bas-Appl; Support: State $10,000; Info. 140

141 MISSISSIPPI - Mississippi State University, State College
Sewage Lagoons
Howard K. Williford; Bas-Appl; Support: State and Miss. State U. $15,000; No info. 141

142 NEW HAMPSHIRE - University of New Hampshire, Durham
Enterococci as Indicators of Pollution Using Membrane Filter
L. W. Slanetz; Bas-Appl; Support: Fed. RG $5,469; Info. 142

143 NEW JERSEY - Rutgers University, New Brunswick
Activated Sludge Studies
H. Heukelekian; Bas; Support: Fed. RG $5,778; Info. 143

144 NEW JERSEY - Rutgers University, New Brunswick
B. O. D. of Pure Organic Compounds
H. Heukelekian; Bas; Support: Fed. RG $4,428; Info. 144

145 NEW JERSEY - Rutgers University, New Brunswick
Fatty Acid Transformation in Anaerobic Digestion By C14 Tagging
H. Heukelekian; Bas; Support: John Van Nostrand Dorr Fellowship $2,400; Info. 145

146 NEW JERSEY - Rutgers University, New Brunswick
Cyanogen Chloride for Determining Residual Chlorine in Wastes
H. Heukelekian; Bas; Support: Fed. RG $4,915; Info. 146

147 NEW JERSEY - Rutgers University, New Brunswick
Household Well Water Supplies
H. Heukelekian; Bas; Support: Fed. RG $3,929; Info. 147

148 NEW JERSEY - Rutgers University, New Brunswick
Lime Neutralization of Dilute Acid Wastes
H. Heukelekian; Bas; Support: Natl. Lime Assoc. $4,000; Info. 148

149 NEW JERSEY - Rutgers University, New Brunswick
Analysis of Organic Matter in Soluble Fractions of Sewage
H. Heukelekian; Bas; Support: Fed. RG $5,462; Info. 149

150 NEW JERSEY - Rutgers University, New Brunswick
Slime Infestation in Streams
H. Heukelekian; Bas; Support: Natl. Council for Stream Improvement $4,800; Info. 150

151 NEW JERSEY - Rutgers University, New Brunswick
Stream Reaeration and Deoxygenation
H. Heukelekian; Bas; Support: Fed. RG $4,571; Info. 151

152 NEW JERSEY - Rutgers University, New Brunswick
Studies on Beggiatoa
H. Heukelekian; Bas; Support: Fed. RG $4,312; Info. 152

153 NEW JERSEY - Rutgers University, New Brunswick
Trunk Sewer Effects on the Biota of Raritan Bay
H. H. Haskin and E. T. Moul; Bas; Support: Fed. RG; Info. 153

154 NEW MEXICO - N. M. College of Agr. and Mechanic Arts, State College
Aerobic Digestion in the Liquid State
J. W. Clark; Bas; Support: Fed. RG $7,500; Info. 154

155 NEW YORK - Assoc. of American Soap and Glycerine Producers, New York
Analysis for Synthetic Detergents ABS in Sewage
Ralph House; Bas; Support: Cooperating Companies; Info. 155

156 NEW YORK - Assoc. of American Soap and Glycerine Producers, New York
Analysis for Phosphates in Water and in Sewage
M. V. Trexler; Bas; Support: Cooperating Companies; Info. 156

157 NEW YORK - Columbia University, New York
Dispersion in Flow-Thru Porous Media
Eugene Simpson; Bas; Support: Fed. U.S. Geological Survey; Info. 157

158 NEW YORK - Columbia University, New York
Applications of Gamma Radiation to Pulping Effluent Treatment
Ernest J. Henley; Bas; Support: Natl. Council for Stream Improvement $2,000; Info. 158

159 NEW YORK - Cornell University, Ithaca
Factors Governing the Fate of Surfactants in Water
Chas. D. Gates; Bas-Appl; Support: Fed. RG $5,129; Info. 159

160 NEW YORK - Cornell University, Ithaca
Treatment of Duck Farm Wastes
Chas. D. Gates; Appl; Support: State $6,000; Info. 160

161 NEW YORK - Haskins Laboratories, New York
Nutritional Studies on Planktonic Algae
Luigi Provasoli; Bas; Support: Fed. RG $14,000; Info.

162 NEW YORK - C. W. Lauman & Company, Beth Page, Long Island
Detergent Wastes From Laundries in Ground Waters of Long Island
C. W. Lauman Co.; Appl; Support: State $5,000; Info.

163 NEW YORK - Manhattan College, Riverdale
Treatment of Organic Waste in Aerated Lagoons
Manhattan College; Bas-Appl; Support: State $4,750; Info.

164 NEW YORK - Manhattan College, Riverdale
Statistical Analysis on Drought Flows in New York State
Manhattan College; Appl; Support: State $3,185; Info.

165 NEW YORK - Manhattan College, Riverdale
Removal of Synthetic Detergents from Water and Wastes
Manhattan College; Bas-Appl; Support: State $4,750; Info.

166 NEW YORK - Manhattan College, Riverdale
Statistical Analysis of Drought Flows in Rivers of New York State
Donald J. O'Connor; Bas-Appl; Support: State $6,300; Info.

167 NEW YORK - Manhattan College, Riverdale
Effect of Physical and Chem
Donald J. O'Connor; Bas-App

168 NEW YORK - New York State Conse
Effect of Pleasure Craft Wa
State Conservation Departme

169 NEW YORK - New York University,
Effectiveness of Various Ty
N. Y. U.; Appl; Support: St

170 NEW YORK - New York University,
Controlled Sewage Filtratic
Wm. T. Ingram; Bas-Appl; Su

NEW YORK - New York University, New York Method for Determination of Nitrate Nitrogen in Sewage Gail P. Edwards; Bas; Support: Fed. RG $6,900; Info.	171
NEW YORK - New York University, New York Effect of Synthetic Detergents on the Activated Sludge Process Gail P. Edwards; Bas; Support: Fed. RG $7,590; Info.	172
NEW YORK - New York University, New York Mechanism of Oxygen Absorption in Aeration Processes Wm. E. Dobbins; Bas; Support: Fed. RG $9,000; Info.	173
NEW YORK - Syracuse University, Syracuse Factors in Construction and Operation of Sewage Oxidation Ponds Syracuse U.; Bas-Appl; Support: State $9,500; Info.	174
NORTH CAROLINA - North Carolina State College, Raleigh Fish Population Related to Pulp Mill Locations B. B. Brandt; Bas; Support: Natl. Council for Stream Improvement; Info.	175
NORTH CAROLINA - North Carolina State College, Raleigh Measurement of Color in Streams C. Smallwood; Bas-Appl; Support: Fed. RG $9,000; Info.	176
NORTH CAROLINA - North Carolina State College, Raleigh Radio-Tracers in Hydraulics of Sewage Plants C. Smallwood; Bas-Appl; Support: N. C. State College; Info.	177
NORTH CAROLINA - University of North Carolina, Chapel Hill Cholinesterase Activity of Fish Brain Tissue Chas. M. Weiss; Bas; Support: Fed. RG $6,463; Info.	178
NORTH CAROLINA - University of North Carolina, Chapel Hill Kinetics and Mechanism of Reactions Involving Chlorine Dioxide Marvin L. Granstrom; Bas; Support: Fed. NSF; Info.	179
NORTH CAROLINA - University of North Carolina, Chapel Hill Oxygen in Waste Treatment Daniel A. Okun; Bas; Support: Fed. RG $8,963; Info.	180

181 NORTH CAROLINA - University of North Carolina, Chapel Hill
Coagulation of Colloids Having Hydroxyl, Amino or Carboxyl Groups
Marvin L. Granstrom; Bas; Support: Fed. RG $5,640; Info.

182 NORTH CAROLINA - University of North Carolina, Chapel Hill
Reoxygenation of Benthal Sludge Load of Third Fork Creek
Chas. M. Weiss; Bas-Appl; Support: U. of N. C. Research Council $465; No info.

183 NORTH CAROLINA - University of North Carolina, Chapel Hill
Treatment of Liquid Wastes from Semi-Chemical Pulping Process
Daniel A. Okun; Bas-Appl; Support: The Mead Corp. $9,200; No info.

184 OHIO - Distillers Feed Research Council, Cincinnati
Recovery of Wastes in Distillers Dried Feeds
L. E. Carpenter; Appl; Support: Cooperating Distilleries; Info.

185 OHIO - Kenyon College, Gambier
Spectrophotometric Determination of Ions in Wastes and Water
J. M. Pappenhagen; Bas-Appl; Support: Fed. RG $2,875; Info.

186 OHIO - Ohio River Valley Water Sanitation Commission, Cincinnati
Continuous Recording and Transmission of Water Quality Data
Ohio River Valley Water Sanitation Comm; Appl; Support: State $31,500; Info.

187 OHIO - Ohio State University, Columb
Quality and Effect of Treatme
Glenn Schwab; Appl; Support.

188 OHIO - Ohio State University,
Infectious Hepatitus Speci
Jackson Riddle; Bas; Suppo

189 OHIO - Ohio State University,
Small Scale Anaerobic-Aer
K. W. Cosens; Appl; Suppo

190 OHIO - Ohio State University,
Acid Mine Drainage Studie
Robt. F. Baker; Bas-Appl;
Natural Resources Institu

191 OHIO - Ohio State University, Columbus
Toxic Waste Studies - Heavy Metals Wastes
W. D. Sheets; Bas-Appl; Support: State $28,000; Info 191

192 OHIO - Ohio State University, Columbus
Waste Water Reclamation
Edw. Q. Moulton; Bas-Appl; Support: Ohio State U. Engrg Experiment Sta. $5,000; Info. 192

193 OHIO - Ohio State University, Columbus
Physiology of Aquatic Bacteria in Acid Mine Drainage
Chester I. Randles; Bas; Support: Fed. RG $7,446; Info. 193

194 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Design Criteria for Seepage Pits and Seepage Beds
T. W. Bendixen; Appl; Support: Fed. FHA $168,000; Info. 194

195 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Serological Identification of Waste Components
R. L. Bunch; Bas-Appl; Support: Fed. U. S. Army $25,500; Info. 195

196 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Improvement of Analysis of Organics in Polluted Water
F. M. Middleton; Bas-Appl; Support: Fed. $45,000; Info. 196

197 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Pollutional Strength of Significant Recurrent Industrial Wastes
Gerald N. McDermott; Bas-Appl; Support: Fed. $4,000; Info. 197

198 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Behavior of Nitriles in Surface Water and Treatment Systems
F. J. Ludzack; Bas-Appl; Support: Fed. $18,000; Info. 198

199 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Effect of Heavy Metals on Sewage Treatment Processes
W. A. Moore; Bas-Appl; Support: Fed. $50,000; Info. 199

200 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Practical Methods for Application of Bioassays
Croswell Henderson; Bas-Appl; Support: Fed. $25,000; Info. 200

201 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Significance of Protozoal and Metazoal Organisms in Water
S. L. Chang; Bas-Appl; Support: Fed. $14,000; Info. 201

202 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Enumeration of Bacterial Indicators of Contamination
Harold F. Clark; Bas-Appl; Support: Fed. $57,000; Info. 202

203 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Role of Fungi in Environmental Sanitation
Wm. B. Cooke; Bas-Appl; Support: Fed. $17,000; Info. 203

204 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Role of Water in the Transmission of Viral Diseases
Norman A. Clarke; Bas-Appl; Support: Fed. $45,000; Info. 204

205 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Efficiency of Silver as a Germicidal Agent
Cecil W. Chambers; Bas-Appl; Support: Fed. $21,000; Info. 205

206 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Microorganisms to Degrade Specific Industrial Waste Components
H. H. Tabak; Bas; Support: Fed. $12,000; Info. 206

207 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Analysis of Taste and Odor Compounds from Algae and Actinomycetes
C. M. Palmer; Bas-Appl; Support: Fed. $35,000; Info. 207

208 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Effects of Impoundments on Water Quality
F. W. Kittrell; Bas-Appl; Support: Fed. $38,000; Info. 208

209 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Sewage Treatment by Stabilization Ponds
W. W. Towne; Bas-Appl; Support: Fed. $38,000; Info. 209

210 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Biological Oxidation Bed Studies
Ralph Porges; Bas; Support: Fed. $36,000; Info. 210

211 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Stream Pollution by Radioactive Wastes From Uranium Ore Refineries
E. C. Tsivoglou; Appl; Support: Fed. $15,000; Info. 211

212 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Anaerobic Contact Process - Complete Treatment of Domestic Sewage
Jack L. Witherow; Appl; Support: Fed. $18,798; Info. 212

213 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Treatment Processes for Small Water Supplies
L. J. McCabe; Appl; Support: Fed. $40,000; Info. 213

214 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Filtration Experiments for Water Treatment Processes
Gordon G. Robeck; Appl; Support: Fed. $20,000; Info. 214

215 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Removal of Coliform Organisms in Water Treatment Processes
Graham Walton; Appl; Support: Fed. $7,500; Info. 215

216 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Conservation and Reuse of Water
Graham Walton; Appl; Support: Fed. $12,500; Info. 216

217 OHIO - University of Cincinnati, Cincinnati
Taste and Odor Study of Water
J. Cholak; Bas-Appl; Support: State $18,500; Info. 217

218 OHIO - University of Cincinnati, Cincinnati
Chloride Uptake by Algae
Wm. E. Gates; Bas-Appl; Support: U. of Cincinnati $2,000; Info. 218

219 OHIO - University of Cincinnati, Cincinnati
Polarographic Determination of Dissolved Oxygen
LeRoy Reuter; Bas-Appl; Support: U. of Cincinnati $1,000; Info. 219

220 OHIO - University of Cincinnati, Cincinnati
Algal-Bacterial Symbiosis in a Closed System
John Pfeffer; Bas-Appl; Support: U. of Cincinnati $2,000; Info. 220

221 OHIO - University of Toledo, Toledo
Application of Dolomite Lime in the Treatment of Water
Robt. E. Martin; Bas-Appl; Support: Finishing Lime Assoc. of Ohio; Info. 221

222 OKLAHOMA - Oklahoma City Water Department, Oklahoma City
Lake Hefner Evaporation Reduction Studies
M. B. Cunningham; Bas-Appl; Support: State-Local; Info. 222

223 OKLAHOMA - Oklahoma State Department of Health, Oklahoma City
Isolation of Virus in a Municipal Water Supply Reservoir
F. R. Hassler; Bas; Support: Fed.-Local; $9,000; Info. 223

224 OKLAHOMA - Oklahoma State University, Stillwater
Toxicity Bioassay of Oil Refinery Wastes
Troy C. Dorris; Bas-Appl; Support: Okla. Oil Refiners Waste Control Council $12,788; No info. 224

225 OKLAHOMA - University of Oklahoma, Norman
Development of Water Quality Criteria for the State of Oklahoma
Geo. Reid; Bas-Appl; Support: State; Info. 225

226 OKLAHOMA - University of Oklahoma, Norman
Use of Chelates in Brine Stabilization
Geo. Reid; Bas-Appl; Support: Fed. Bureau of Mines; Info. 226

227 OREGON - Oregon State College, Corvallis
Toxicological - Physiological Effects of Wastes on Aquatic Life
Peter Doudoroff; Bas-Appl; Support: Fed. and Ore. State College $30,000; Info. 227

228 OREGON - Oregon State College, Corvallis
Aquatic Biology Aspects of Stream Pollution
Chas. E. Warren; Bas-Appl; Support: Fed., Industry and Ore. State College $23,000; Info. 228

229 OREGON - Oregon State College, Corvallis
The Disposal of Sulfite Pulping Effluents
Isaiah Gellman; Bas-Appl; Support: Natl. Council for Stream Improvement $9,000; Info. 229

230 OREGON - Oregon State College, Corvallis
Resistance of Marine Animals to Various Pollutional Conditions
R. E. Dimick; Bas-Appl; Support: Fed. RG; National Council for Stream Improvement and Ore. Agric. Experiment Sta. $20,000; Info. 230

231 OREGON - Oregon State College, Corvallis
Road Building and Logging Effects on Erosion, Sedimentation, etc.
Robt. H. Ruth; Bas-Appl; Support: State Forest Service; Info. 231

232 OREGON - Oregon State College, Corvallis
Physical, Chemical, Biological Aspects of Deep Trickling Filters
Fred Merryfield; Bas-Appl; Support: State & Ore. State College Engrg. Experiment Sta.; Info. 232

233 OREGON - Oregon State College, Corvallis
Deep Trickling Filter Study
Ore. State Coll. Engrg. Experiment Sta.; Bas-Appl; Support: State and Ore. State Coll. $5,050; Info. 233

234 OREGON - Oregon State College, Corvallis
Sewage Oxidation Lagoon Project
Fred J. Burgess; Appl; Support: State, Ore. State College and City of Corvallis $9,385; Info. 234

235 PENNSYLVANIA - Academy of Natural Sciences, Philadelphia
Biological Survey of Tidal Estuary of the Delaware River
Ruth Patrick; Bas-Appl; Support: Fed. and Interstate Comm. on Del. River Basin $17,500; Info. 235

236 PENNSYLVANIA - Academy of Natural Sciences, Philadelphia
Environment and Toxicity of Compounds to Aquatic Life
Ruth Patrick; Bas-Appl; Support: Fed. RG $14,286; Info. 236

237 PENNSYLVANIA - Academy of Natural Sciences, Philadelphia
Studies of Recovery of Polluted River Water
Ruth Patrick; Bas-Appl; Support: Fed. and Interstate Comm. on Del. River Basin; Info. 237

238 PENNSYLVANIA - Academy of Natural Sciences, Philadelphia
Effect of ABS in Water on Aquatic Life
H. Radycliffe Roberts; Appl; Support: Assoc. of Amer. Soap & Glycerine Producers $2,000; Info. 238

239 PENNSYLVANIA - Lehigh University, Lehigh
Instruments to Analyze Delaware River Water Quality
Geo. W. Jenkins; Bas-Appl; Support: Fed. and Interstate Comm. on Del. River Basin $10,000; Info. 239

240 PENNSYLVANIA - Lehigh University, Lehigh
Neutralization of Bottom Muds and Waters by Alkaline Stack Dusts
Geo. W. Jenkins; Bas; Support: Fed. and Interstate Comm. on Del. River Basin $12,500; Info. 240

241 PENNSYLVANIA - Mellon Institute, Pittsburgh
Study of Sedimentation Emphasizing Flue Dust and Mill Scale
Richard D. Hoak; Bas-Appl; Support: Amer. Iron and Steel Inst; Info. 241

242 PENNSYLVANIA - Mellon Institute, Pittsburgh
The Origin of Tastes and Odors in Drinking Water
Richard D. Hoak; Bas; Support: Amer. Iron and Steel Inst.; Info. 242

243 PENNSYLVANIA - Pennsylvania State University, University Park
Aerobic Metabolism of Cyanogenic Compounds
John B. Nesbitt; Bas; Support: Fed. RG $8,000; Info. 243

244 PENNSYLVANIA - Pennsylvania State University, University Park
Design Criteria for Total Oxidation Activated Sludge Treatment
R. Rupert Kountz; Bas-Appl; Support: Fed. RG $15,000; Info. 244

245 RHODE ISLAND - Rolf Eliassen Associates, Inc., Cranston
Plant Scale Study of Complete-Mixing Activated Sludge Process
Ross E. McKinney; Appl; Support: State and Assoc. of Amer. Soap & Glycerine Producers $17,000; Info. 245

246 TENNESSEE - Tennessee Department of Public Health, Nashville
Preservation of Enteric Organisms with Chelating Agents
Ernest L. Shipe; Bas-Appl; Support: Fed. RG $10,000; Info. 246

247 TEXAS - Baylor University, Waco
Toxic Properties of the Blue-Green Algae
Floyd F. Davidson; Bas-Appl; Support: Fed. RG; Info. 247

248 TEXAS - North Texas State College, Denton
Chemical and Physical Quality of Lake Texoma Water
J. K. G. Silvey; Bas; Support: Fed. $1,890; Info. 248

249 TEXAS - North Texas State College, Denton
Nutritional Requirements of Aquatic Actinomycetes
J. K. G. Silvey; Bas; Support: Fed. RG $14,400; Info. 249

250 TEXAS - University of Texas, Austin
Ground Water Recharge as Affected by Phosphate Solubilities
Earnest F. Gloyna; Bas; Support: Industrial Organization; No info. 250

251 TEXAS - University of Texas, Austin
Low-Level Radioactivity Background Survey
Earnest F. Gloyna; Bas-Appl; Support: Fed. AEC $10,800; Info 251

252 TEXAS - University of Texas, Austin
Reactor Fuel Waste Disposal - Salt Cavity Type
Earnest F. Gloyna; Bas-Appl; Support: Fed. AEC $20,000; Info. 252

253 TEXAS - University of Texas Medical Branch, Galveston
Disinfection of Sewage and Sewage Sludges by Halogens
C. H. Connell; Bas-Appl; Support: Fed. RG $11,000; Info. 253

254 UTAH - University of Utah, Salt Lake City
Oxidation Pond Characteristics - Raw Domestic Sewage
Grant K. Borg; Bas-Appl; Support: State $6,000; Info. 254

255 UTAH - Utah State University, Logan
Effects of Fluorides on Fish
Wm. F. Sigler; Bas; Support: Fed. RG $12,995; Info. 255

256 UTAH - Utah State University, Logan
Water Supplies and Utilization in Various Utah Counties
Jay M. Bagley; Appl; Support: State; Info. 256

257 VERMONT - University of Vermont, Burlington
Nutritional Requirements of Kirchneriella Subsolitaria
Milton Potash; Bas; Support: Fed. RG $6,325; Info. 257

258 VERMONT - University of Vermont, Burlington
Value of Whey When Used on Soil and Crops
A. R. Midgley; Bas-Appl; Support: State and U. of Vt. $5,500;
Info. 258

259 VIRGINIA - Virginia Polytechnic Institute, Blacksburg
Resistance of Bituminous Fibre Pipe Joints to Root Penetration
W. A. Parsons; Appl; Support: Bituminous-Fibre Pipe Inst.
$6,000; Info. 259

260 VIRGINIA - Virginia Polytechnic Institute, Blacksburg
Analysis and Treatment of Semi-Chemical Pulping Effluents
Millard H. Robbins; Appl; Support: Natl. Council for Stream
Improvement $9,624; Info. 260

261 WASHINGTON - Washington State University, Pullman
Some Characteristics of Anaerobic Digestion
G. H. Dunstan; Bas-Appl; Support: Fed. RG and Wash. State U. $9,000; Info.

262 WASHINGTON - Washington State University, Pullman
Sewage Oxidation Ponds in Washington
G. H. Dunstan; Appl; Support: Consulting Engr. and Wash. State U. $1,500; Info.

263 WASHINGTON - Washington State University, Pullman
Study of Sphaerotilus in Irrigation Water
G. H. Dunstan; Bas-Appl; Support: City of Walla Walla and Wash. State U. $5,000; Info.

264 WASHINGTON - University of Washington, Seattle
Data Collection in Marine Waters Adjacent to Manufacturing Area
Clifford A. Barnes; Bas; Support: State $1,200; Info.

265 WASHINGTON - University of Washington, Seattle
Large Lake Fertilized With Sewage Treatment Plant Effluent
W. T. Edmondson; Bas; Support: Fed. RG $10,421; Info.

266 WASHINGTON, DISTRICT OF COLUMBIA - Georgetown University, Washington
Radioactive Isotope Technique for Detection of Coliforms
Walter C. Hess; Bas-Appl; Support: Fed. RG $20,000; Info.

267 WISCONSIN - American Society of B
Increasing In-Plant Recover
Alex Sigal; Appl; Support:

268 WISCONSIN - Red Dot Foods, Mad:
Waste Disposal
Ken Sellers; Appl; Suppo:

269 WISCONSIN - Sulphite Pulp Manu:
Cooperative Stream Studi
A. J. Wiley; Appl; Suppo
Mfrs. Res'ch League; $7,

270 WISCONSIN - Sulphite Pulp Manu
Saline Water Conservatio
A. J. Wiley; Bas-Appl; $
League; Info.

271 WISCONSIN - Sulphite Pulp Manufacturers' Research League, Appleton
Basic Research on Lignin Components of Spent Sulphite Liquor
Irwin Pearl; Bas; Support: Sulphite Pulp Mfrs. Research League $27,000; Info. 271

272 WISCONSIN - Sulphite Pulp Manufacturers' Research League, Appleton
Applied Research on Lignin Components of Spent Sulphite Liquor
Julius Benko; Bas-Appl; Support: Sulphite Pulp Mfrs. Res'ch League $16,750; Info. 272

273 WISCONSIN - Sulphite Pulp Manufacturers' Research League, Appleton
Research on Carbohydrates of Spent Sulphite Liquor
Lawrence A. Boggs; Bas-Appl; Support: Sulphite Pulp Mfrs. Res'ch League $27,000; Info. 273

274 WISCONSIN - University of Wisconsin, Madison
Stabilization Pond Studies
G. A. Rohlich; Bas-Appl; Support: Oscar Mayer & Co., Rockefeller Foundn., and U. of Wisc. Alumni Res'ch Foundn.; Info. 274

275 WISCONSIN - University of Wisconsin, Madison
Thermophilic Digestion of Activated Sludge
G. A. Rohlich; Bas; Support: U. of Wisc. Alumni Res'ch Foundn. $2,320; Info. 275

276 WISCONSIN - University of Wisconsin, Madison
Use of Aeration in the Conditioning of Sewage Sludges
G. A. Rohlich; Bas-Appl; Support: Walker Process Equipment Co. $2,850; Info. 276

277 WISCONSIN - University of Wisconsin, Madison
Spray Irrigation of Dairy Wastes
L. E. Engelbert; Appl; Support: Fed. U.S.D.A. $5,400; Info. 277

278 WISCONSIN - University of Wisconsin, Madison
Frothing in Sewage Treatment
G. A. Rohlich; Bas-Appl; Support: Assoc. of Amer. Soap & Glycerine Producers $12,000; Info. 278

279 WISCONSIN - University of Wisconsin, Madison
Effect of Algae on BOD Measurements
Geo. P. Fitzgerald; Bas; Support: Fed. RG $12,600; Info. 279

280 WISCONSIN - University of Wisconsin, Madison
Effect of Pollutants on Fish Flavor
Dorothy Strong; Bas; Support: State $5,150; Info. 280

ANALYSIS OF DATA IN RESEARCH PROJECT LIST

The following is a brief analysis of the information contained in the preceding project list. This year's listing of 280 projects represents work that is being conducted in 38 of the 50 states and the District of Columbia. As might be expected, the research is fairly heavily concentrated in a small number of states. The 12 states reporting the most projects accounted for 167, or nearly 60% of the total. The total figure includes Ohio, with the exception of the 23 projects at the Public Health Service Sanitary Engineering Center located in that state.

Table 1 presents a classification of water supply and pollution control research on the basis of institutions and organizations in which the research work is being done. As can be immediately seen, most of the research in this field is being done at universities, while other types of organizations take a comparatively small part in direct research activities. The bulk of research people in this field are in the schools, and this fact explains the heavy concentration of research there.

Table 1

NUMBER OF RESEARCH PROJECTS CONDUCTED IN INSTITUTIONS AND ORGANIZATIONS

	No. of Projects	Per cent
Universities	205	73.2%
State and Interstate Agencies	25	8.9%
Federal Agencies	23	8.2%
Industrial Organizations	17	6.1%
Local Agencies	10	3.6%
Total	280	100.0%

While institutions other than universities have a rather small direct role in conducting research, they make a considerable indirect contribution to supporting research in water supply and pollution control. Table 2 lists institutions and organizations and shows the amount of money from each of these sources supporting water supply and pollution control research. Since the reporting of the amount of support was voluntary, the total reported figures did not include all of the 280 projects listed in the Inventory. Table 2 presents the amount of money determined by prorating the average amount reported per project over the total number of projects supported by each source.

While the bulk of the research in this field is being conducted at universities, most of its support is coming from sources other than university budgets and special funds. Federal agencies, State agencies, and industrial organizations account for the largest amount of support. The figure for Federal Agencies includes funds from sources other than the Public Health Service. In addition, there were a small number of grants from private individuals which have not been included because the amount represented was insignificant.

TABLE 2

AMOUNT OF RESEARCH PROJECT SUPPORT BY INSTITUTIONS AND ORGANIZATIONS

	Amount	Per cent
Universities	$ 143,000	4.1%
State Agencies	928,000	26.5%
Federal Agencies	1,878,000	53.6%
Industrial Organizations	464,000	13.3%
Local Agencies	87,000	2.5%
Total	3,500,000	100.0%

This first analysis must, because of its newness, be limited in scope. In future years, comparisons and trends will doubtless be indicated and it is hoped that this publication will provide people in the field of water supply and pollution control research with at least an annual "thumb-nail sketch" of activities and trends. Analysis may be done in the future on the people involved in this research, in terms of their professional specialties. Such data would point out the importance of inter-disciplinary cooperation and would be valuable in determining the future needs of various specialties. In addition, analysis will be done on the areas in which research is being conducted in the field of water supply and pollution control. The Subject Index which follows gives an overall view of this aspect, but more detailed information might also become a guide to where research in this field is going, and where it needs, perhaps, to be increased.

2 Subject Index BY RESEARCH AR

SUBJECT INDEX

The second section of the Research Inventory provides a working reference index for use in locating projects in the Project List. The number to the right of each reference title is the number given each project in the Project List (Section 1).

This Subject Index was designed to include only those subjects or research areas which are important because they are well represented in the group of projects reported.

The following is a list of the basic research areas contained in the index. Sub-headings of a number of these will be found in the index itself.

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- Coliforms & enterococci as indices of water quality - 94
- Enterococci as indicators of pollution - 142
- Improvement of molecular membrane bacteriological techniques - 117
- Shigella dysentery in irrigation water - 24

BIOCHEMICAL:
- B.O.D. of pure organic compounds - 144
- Characteristics of synthetic detergents - 123
- Effect of algae on B.O.D. measurements - 279
- Versene to eliminate effect of metals on B.O.D. - 35

BIOLOGICAL:
- Aquatic biology aspects of stream pollution - 228
- Assay of Louisiana sugar mill wastes - 103
- Survey of tidal estuary of Delaware River - 235

CHEMICAL:
- ABS in sewage - 155
- Assay of Louisiana sugar mill wastes - 103
- Cyanogen chloride to determine residual chlorine in wastes - 146
- Effect of chemical variables on reaeration - 167
- Kinetics & mechanism of reactions involving chlorine dioxide - 179
- Nitrate nitrogen in sewage - 171
- Organic matter in soluble fractions of sewage - 149
- Organics in polluted water - 196
- Quality of Lake Texoma (Texas) water - 248
- Short method for determining ABS in water & sewage - 21

CHROMATOGRAPHIC:
- Assay of extracellular algal metal
- Identification of organic acids ir

ELECTRICAL:
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- Digital computer estimation of re
- Study of surface precipitation us

FLUORESCENT:
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Data collection in marine waters adjacent to manufacturing area - 264
Improvement in analytical techniques - 36
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Lake Whitney (Connecticut) sanitary conditions vs. lab exams - 41
Methods for estimation of contaminants in liquid chlorine - 80
Origin of taste & odor in drinking water - 242
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Toxicity bioassay of oil refinery wastes - 224
Toxicological-physiological effects of wastes on aquatic life - 227
Various aspects of the Great Lakes - 136

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Kinetics & mechanism of reactions involving chlorine dioxide - 179
Quality of Lake Texoma (Texas) water - 248

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C_{14} tagging for study of fatty acid transformation - 145
Determining isotopes in water & sewage - 139
Isotope technique for detection of coliforms - 266
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Tracer study of endogenous metabolism - 122
Tracers in hydraulics of sewage plants - 177
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- Effect of ABS in water on aquatic life - 238
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- Resistance of marine animals to various pollutional conditions - 230
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- Toxicological-physiological effects of wastes on aquatic life - 227
- Trunk sewer effects on biota of Raritan Bay - 153

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Value of whey when used on soil & crops - 258
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ADDRESS LIST

The third section of the Research Inventory comprises a list of the names and addresses of those reporting the research projects in this survey. It will be noted that the reporter is not always the principal investigator for a given project. Reporters are assumed to be familiar with the details of research projects and to be the logical source of available information.

The number preceeding each name and address in the Address List corresponds to the number of the research project in the Project List (Section 1).

1 and 2
Theodore Jaffe
Professor, Civil Engineering
Alabama Polytechnic Institute
Auburn, Alabama

3 thru 5
Amos J. Alter
Administrator, Alaska Water Pollution Control Board
Alaska Office Building
Juneau, Alaska

6 and 7
M. L. Wood
Director, Arkansas Water Pollution Control Commission
921 West Markham
Little Rock, Arkansas

8
Loren R. Heiple
Head, Civil Engineering Department
University of Arkansas
Fayetteville, Arkansas

9
A. C. Ingersoll
Associate Professor, Civil Engineering
California Institute of Technology
1201 East California Street
Pasadena, California

10 and 11
Paul R. Bonderson
Executive Officer, California Water Pollution Control Board
Room 316, 1227 O Street
Sacramento 14, California

12 and 13
John W. DeWitt
Associate Professor, Fisheries
Humboldt State College
Arcata, California

14
Walter A. Mercer
Bacteriologist
National Canners Association
1950 Sixth Street
Berkeley 10, California

15
Galen E. Jones
Assistant Research Microbiologist
Scripps Institute of Oceanography
La Jolla, California

16
Paul R. Bonderson
Executive Officer, California Water Pollution Control Board
Room 316, 1227 O Street
Sacramento 14, California

17
Erman A. Pearson
Associate Professor, Sanitary Engineering
University of California
Room 111, Engineering Building
Berkeley, California

18
Roy W. Peet
Manager, Association of American Soap & Glycerine Producers
295 Madison /
New York 17, New York

19 and 20
Robert C. Merz
Professor, Civil Engineering
University of Southern California
Los Angeles 7, California

21
Roy W. Peet
Manager, Association of American Soap & Glycerine Producers
295 Madison Avenue
New York 17, New York

22
Donald J. Reish
Research Associate, Department of Biology
University of Southern California
Los Angeles 7, California

23
Robert E. Stevenson
Director, Inshore Research
Hancock Foundation
University of Southern California
Los Angeles 7, California

24
Stuart G. Dunlop
Associate Professor, Microbiology
University of Colorado
School of Medicine
Denver 20, Colorado

25 thru 35
Joseph W. Masselli
Research Chemist
Wesleyan University
Middletown, Connecticut

36 thru 39
Merwin E. Hupfer
Senior Sanitary Engineer
Water Resources Commission
State Office Building
Hartford, Connecticut

40 and 41
E. L. MacLeman
Associate Professor, Civil Engineering
Yale University
New Haven, Connecticut

42
V. C. Behn
Associate Professor
University of Delaware
Newark, Delaware

43
Paul Bock
Assistant Professor, Civil Engineering
University of Delaware
Newark, Delaware

44 and 45
A. P. Black
Research Professor, Chemistry
University of Florida
Gainesville, Florida

46 thru 48
A. M. Buswell
Research Professor, Chemistry
University of Florida
Gainesville, Florida

49 thru 53
John E. Kiker, Jr.
Professor, Civil Engineering
University of Florida
Gainesville, Florida

54
G. R. Frith
Engineer, Georgia Department of Public Health
309 State Office Building
Atlanta 3, Georgia

55
Harry W. Gehm
Technical Advisor, National Council for Stream Improvement
271 Madison Avenue
New York 16, New York

56 thru 63
John R. Baylis
Engineer of Water Purification
Department of Water and Sewers
3300 East Cheltenham Place
Chicago, Illinois

64
L. G. Rich
Associate Professor
Illinois Institute of Technology
Chicago 16, Illinois

65
Leslie R. Hedrick
Chairman, Department of Biology
Illinois Institute of Technology
Chicago 16, Illinois

66 thru 74
William C. Ackermann
Chief, Illinois State Water Survey
Box 232
Urbana, Illinois

75
J. L. Witherow
Assistant Sanitary Engineer
Robert A. Taft Sanitary Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

76
R. S. Engelbrecht
Associate Professor, Sanitary Engineering
University of Illinois
Urbana, Illinois

77
A. J. Steffen
Director, Sanitary Engineering
Wilson & Company, Inc.
Chicago, Illinois

78
M. B. Ettinger
Chief, Chemistry & Physics, WS & PC Program
Robert A. Taft Sanitary Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

79
Harry W. Gehm
Technical Advisor, National Council for Stream Improvement
271 Madison Avenue
New York 16, New York

80
M. G. Mellon
Department of Chemistry
Purdue University
Lafayette, Indiana

81 thru 86
G. H. Teletzke
Associate Professor, Sanitary Engineering
Purdue University
Lafayette, Indiana

87 and 88
H. R. Wilke
Associate Professor, Sanitary Engineering
Purdue University
Lafayette, Indiana

89 thru 91
E. R. Baumann
Professor, Civil Engineering
Iowa State College
Ames, Iowa

92
Ro
R
R
W

93
S
C
K
S
T

94
C
C

K
6
T

95
Reed F. Morse
Head, Department of Civil Engineering
Kansas State College
Manhattan, Kansas

96 and 97
R. T. Page
Associate Professor, Sanitary Engineering
University of Kansas
Lawrence, Kansas

98
Louis F. Birkel
Executive Director, Water Pollution Control Commission
620 South Third Street
Louisville 2, Kentucky

99 and 100
Edward J. Cleary
Executive Director, Ohio River Valley Water Sanitation Commission
414 Walnut Street
Cincinnati 2, Ohio

101
Harry W. Gehm
Technical Advisor, National Council for Stream Improvement
271 Madison Avenue
New York 16, New York

102
Arthur G. Keller
Professor, Chemical Engineering
Louisiana State University
Baton Rouge 3, Louisiana

103 thru 105
K. E. Biglane
Chief, Division of Water Pollution Control
Louisiana Wildlife & Fisheries Commission
Box 9055, University Station
Baton Rouge, Louisiana

106
James E. Sublette
Associate Professor
Northwestern State College
Box 1348, N. S. C.
Natchitoches, Louisiana

107 and 108
Harry W. Gehm
Technical Advisor, National Council for Stream Improvement
271 Madison Avenue
New York 16, New York

109
Seymour James Ryckman
Professor, Sanitary Engineering
University of Maine
Orono, Maine

110 thru 113
John C. Geyer
Professor, Sanitary Engineering
Johns Hopkins University
Baltimore 18, Maryland

114
C. H. Hull
Research Associate, Department of Sanitary Engineering
Johns Hopkins University
Baltimore 18, Maryland

115
Edwin E. Pyatt
Research Staff Assistant
Johns Hopkins University
Baltimore 18, Maryland

116
Roy W. Peet
Manager, Association of American Soap & Glycerine Producers
295 Madison Avenue
New York 17, New York

117 and 118
Charles E. Renn
Professor, Sanitary Engineering
Johns Hopkins University
Baltimore 18, Maryland

119
Robert M. Brown
Chief, Bureau of Environmental Hygiene
Maryland Department of Health
2411 North Charles Street
Baltimore 18, Maryland

120
M. B. Ettinger
Chief, Chemistry & Physics, WS & PC Program
Robert A. Taft Sanitary Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

121 thru 127
Rolf Eliassen
Professor, Sanitary Engineering
Massachusetts Institute of Technology
Cambridge, Massachusetts

128
Harry W. Gehm
Technical Advisor, National Council for Stream Improvement
271 Madison Avenue
New York 16, New York

129
R. U. Byerrum
Professor, Chemistry
Michigan State University
East Lansing, Michigan

130
Robert F. McCauley
Associate Professor
Michigan State University
East Lansing, Michigan

131 and 132
Karl L. Schulze
Assistant Professor, Civil Engineering
Michigan State University
East Lansing, Michigan

133 and 134
L. F. Oeming
Chief Engineer, Water Resources Commission
Lansing, Michigan

135 and 136
George H. Lauff
Assistant Professor, Zoology
University of Michigan
Ann Arbor, Michigan

137
Harry W. Gehm
Technical Advisor, National Council for Stream Improvement
271 Madison Avenue
New York 16, New York

138
J. A. Borchardt
Associate Professor
University of Michigan
Ann Arbor, Michigan

139
Richard B. Hahn
Professor, Chemistry
Wayne State University
Detroit 2, Michigan

140
Harvey G. Rogers
Executive Engineer, State Water Pollution Control Commission
Minneapolis, Minnesota

141
Howard K. Williford
Professor, Civil Engineering
Mississippi State University
State College, Mississippi

142
L. W. Slanetz
Professor, Bacteriology
University of New Hampshire
Durham, New Hampshire

143 thru 152
H. Heukelekian
Chairman, Department of Sanitation
Rutgers University
New Brunswick, New Jersey

153
H. H. Haskin
Professor, Zoology
Rutgers University
New Brunswick, New Jersey

154
J. W. Clark
Professor, Civil Engineering
New Mexico A & M
State College, New Mexico

155 and 156
Roy W. Peet
Manager, Association of American Soap & Glycerine Producers
295 Madison Avenue
New York 17, New York

157
Richard Skalak
Associate Professor, Civil Engineering
Columbia University
New York 27, New York

58
Harry W. Gehm
Technical Advisor, National Council for Stream Improvement
271 Madison Avenue
New York 16, New York

59 and 160
Charles D. Gates
Associate Professor, Civil Engineering
Cornell University
Ithaca, New York

161
Luigi Provasoli
Staff Microbiologist
Haskins Laboratory
305 East 43rd Street
New York 17, New York

162 thru 165
A. F. Dappert
Executive Secretary, Water Pollution Control Board
State Department of Health
84 Holland Avenue
Albany 8, New York

166 and 167
Brother Joseph McCabe
Head, Civil Engineering Department
Manhattan College
New York 71, New York

168 and 169
A. F. Dappert
Executive Secretary, Water Pollution Control Board
State Department of Health
84 Holland Avenue
Albany 8, New York

170
William T. Ingram
Adjunct Professor, College of Engineering, Research Division
New York University
University Heights
New York 53, New York

171 and 172
Gail P. Edwards
Professor, Sanitary Chemistry
New York University
University Heights
New York 53, New York

173
William E. Dobbins
Professor, Sanitary Engineering
New York University
University Heights
New York 53, New York

174
A. F. Dappert
Executive Secretary, Water Pollution Control Board
State Department of Health
84 Holland Avenue
Albany 8, New York

175
Harry W. Gehm
Technical Advisor, National Council for Stream Improvement
271 Madison Avenue
New York 16, New York

176 and 177
C. Smallwood, Jr.
Professor, Civil Engineering
North Carolina State College
Raleigh, North Carolina

178 thru 183
Daniel A. Okun
Head, Department of Sanitary Engineering
School of Public Health
University of North Carolina
Chapel Hill, North Carolina

184
C. S. Boruff
Distillers Feed Research Council
1232 Enquirer Building
Cincinnati, Ohio

185
J. M. Pappenhagen
Associate Professor, Chemistry
Kenyon College
Gambier, Ohio

186
Edward J. Cleary
Executive Director, Ohio River Valley Water Sanitation Commission
414 Walnut Street
Cincinnati 2, Ohio

187 and 188
Kenneth W. Cosens
Associate Professor, Civil Engineering
Ohio State University
Columbus 10, Ohio

189
T. W. Bendixen
Soil Scientist
Robert A. Taft Sanitary Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

190 thru 192
Edward Quentin Moulton
Assistant Professor, Civil Engineering
Ohio State University
Columbus 10, Ohio

193
Chester I. Randles
Associate Professor, Bacteriology
Ohio State University
Columbus 10, Ohio

194
T. W. Bendixen
Soil Scientist
Robert A. Taft Sanitary Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

195 thru 199
M. B. Ettinger
Chief, Chemistry & Physics, WS & PC Program
Robert A. Taft Sanitary Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

200
Croswell Henderson
Biologist
Robert A. Taft Sanitary
Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

201 thru 206
Paul W. Kabler
Chief, Microbiology
Robert A. Taft Sanitary
Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

07
C. M. Palmer
Biologist
Robert A. Taft Sanitary
Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

08 thru 211
W. W. Towne
Chief, Water Pollution Control
WS & PC Program
Robert A. Taft Sanitary
Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

2
J. L. Witherow
Assistant Sanitary Engineer
Robert A. Taft Sanitary
Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

thru 216
Richard L. Woodward
Chief, Water Supply,
WS & PC Program
Robert A. Taft Sanitary
Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

217
Edward J. Cleary
Executive Director, Ohio River
Valley Water Sanitation
Commission
414 Walnut Street
Cincinnati 2, Ohio

218 thru 220
J. D. Eye
Associate Professor, Civil
Engineering
University of Cincinnati
Cincinnati 21, Ohio

221
Robert E. Martin
Associate Professor, Chemistry
Institute of Silicate Research
University of Toledo
Toledo, Ohio

222 and 223
G. F. Mathews, M.D.
Commissioner of Health
State Department of Health
3400 North Eastern
Oklahoma City 5, Oklahoma

224
Troy C. Dorris
Assistant Professor, Zoology
Oklahoma State University
Stillwater, Oklahoma

225 and 226
George Reid
Director, Bureau of Water
Resources
University of Oklahoma
Norman, Oklahoma

227
Clarence M. Tarzwell
Chief, Aquatic Biology,
WS & PC Program
Robert A. Taft Sanitary
Engineering Center
4676 Columbia Parkway
Cincinnati, Ohio

228
Charles E. Warren
Assistant Professor, Department of Fish & Game Management
Oregon State College
Corvallis, Oregon

229
Harry W. Gehm
Technical Advisor, National Council for Stream Improvement
271 Madison Avenue
New York 16, New York

230
W. P. Breese
Assistant Fishery Biologist
Department of Fish & Game Management
Oregon State College
Corvallis, Oregon

231 and 232
Warren C. Westgarth
Assistant Professor, Civil Engineering
Oregon State College
Corvallis, Oregon

233 and 234
Kenneth H. Spies
Deputy State Sanitary Engineer
Oregon State Sanitary Authority
1400 Southwest 5th Avenue
Portland 1, Oregon

235 thru 237
Ruth Patrick
Curator of Limnology
Academy of Natural Sciences
Philadelphia 3, Pennsylvania

238
Roy W. Peet
Manager, Association of American Soap & Glycerine Producers
295 Madison Avenue
New York 17, New York

239 and 240
George W. Jenkins
Director, Research Institute
Lehigh University
South Bethlehem, Pennsylvania

241 and 242
Richard D. Hoak
Senior Fellow
Mellon Institute
Pittsburgh 13, Pennsylvania

243 and 244
John B. Nesbitt
Assistant Professor, Civil Engineering
Pennsylvania State University
Room 3 Sackett
University Park, Pennsylvania

245
Walter J. Shea
Chief, Division of Sanitary Engineering
Rhode Island Department of Health
335 State Office Building
Providence, Rhode Island

246
Ernest L. Shipe, Jr.
Associate Laboratory Director, Division of Laboratories
Tennessee Department of Public Health
Nashville, Tennessee

247
Floyd F. Davidson
Professor, Biology
Baylor University
Waco, Texas

248 and 249
J. K. G. Silvey
Chairman, Division of Science
North Texas State College
Denton, Texas

hru 252
rnest F. Gloyna
oject Director
iversity of Texas
stin, Texas

H. Connell
ofessor, Sanitation
partment of Preventive
Medicine & Public Health
iversity of Texas Medical Branch
iveston, Texas

ant K. Borg
ad, Civil Engineering
Department
Iversity of Utah
t Lake City, Utah

liam F. Sigler
d, Wildlife Department
h State University
an, Utah

M. Bagley
istant Professor, Civil and
rrigation Engineering
h State University
an, Utah

con Potash
istant Professor, Zoology
versity of Vermont
ington, Vermont

. Thieme
issioner of Water Resources
e Water Conservation Board
pelier, Vermont

259
W. A. Parsons
Associate Professor
Virginia Polytechnic Institute
Blacksburg, Virginia

260
Harry W. Gehm
Technical Advisor, National
Council for Stream Improvement
271 Madison Avenue
New York 16, New York

261 thru 263
Gilbert H. Dunstan
Professor, Sanitary Engineering
Washington State University
Pullman, Washington

264
Alfred T. Neale
Supervising Pollution Control
Engineer
State Pollution Control
Commission
224 Old Capitol Building
Olympia, Washington

265
W. T. Edmondson
Professor, Zoology
University of Washington
Seattle 5, Washington

266
Walter C. Hess
Professor, Biological Chemistry
Georgetown University
School of Medicine
Washington 7, D.C.

267
Alex Sigal
Pabst Brewing Company
917 West Juneau Avenue
Milwaukee, Wisconsin

268
Mr. R. D. Foster
Red Dot Foods
1435 E. Washington Avenue
Madison, Wisconsin

269 thru 273
Averill J. Wiley
Technical Director, Sulphite
Pulp Manufacturers' Research
League
P. O. Box 436
Appleton, Wisconsin

274 thru 279
G. A. Rohlich
Professor, Civil Engineering
University of Wisconsin
Madison, Wisconsin

280
T. F. Wisniewski
Director, Committee on
Water Pollution
State Office Building
Madison 2, Wisconsin

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